What is claimed is:

1. A method for determining the proportion of differing particle types in a mixture, comprising:

(i) feeding a mixture comprising at least two particle types of non-cohesive particles, each particle type having at least one optical property and/or shape differing from another particle type, from a particle feeder having an exit end to a smooth, planar, stationary surface inclined at an angle sufficient to enable the particles to descend along the surface through the force of gravity, said surface having an upper inlet end located adjacent to and below the exit end of the feeder and capable of being positioned at a distance no greater than the smallest dimension of the particles;

(ii) illuminating the particles along the inclined surface;

(iii) collecting reflective-light images of the illuminated particles; and

(iv) calculating the proportion of at least one particle type based on data from the reflective light images indicative of the at least one differing optical property and/or shape.

2. The method of claim 1, wherein the at least one optical property is at least one of reflectance, luminescence and variations thereof at visible, ultraviolet and infrared wavelengths.

3. The method of claim 2 further comprising calculating at least one dimensional property.

4. The method of claim 3, wherein the at least one dimensional property is at least one of longest dimension, shortest dimension, area and perimeter.

5. The method of claim 1, wherein the inclined surface is about 60° or less from horizontal.

6. The method of claim 1, wherein the reflective-light images are collected at about perpendicular to the inclined surface.

7. The method of claim 1 further comprising adjusting the feed rate of the particles as they are fed from the feeder to the inclined surface based on feedback received from the calculating step.

8. The method of claim 7, wherein the feed rate is adjusted to provide that less than 25% of the particles on the inclined surface are touching another particle in the reflective-light images.

9. The method of claim 8, wherein the feed rate is adjusted to provide that less than 10% of the particles on the inclined surface are touching another particle in the reflective-light images.

10. The method of claim 9, wherein the feed rate is adjusted to provide that less than 2% of the particles on the inclined surface are touching another particle in the reflective-light images.

11. The method of claim 1, wherein the non-cohesive particles are non-spheroidal and the inlet end of the inclined surface is positioned to provide that at least 80% of the particles have a bounce angle of 10 degrees or less.

12. The method of claim 11, wherein the inlet end of the inclined surface is positioned to provide that at least 90% of the particles have a bounce angle of 10 degrees or less.

13. The method of claim 11, wherein the inlet end of the inclined surface is positioned to provide that at least 95% of the particles have a bounce angle of 10 degrees or less.

14. The method of claim 1, wherein the mixture of non-cohesive particles comprises particles substantially cylindrical in shape.

15. The method of claim 1, wherein the mixture of non-cohesive particles comprises particles having a shape substantially cylindrical with a circular cross-section.

16. The method of claim 1, wherein the mixture of non-cohesive particles comprises seed.

17. The method of claim 1, wherein the mixture of non-cohesive particles comprises particles comprising at least one agriculturally active material.

18. The method of claim 1, wherein the mixture of non-cohesive particles comprises particles comprising at least one crop protection agent.

19. The method of claim 1, further comprising blowing an inert gas nearly parallel but slightly downward towards the inclined surface to remove any dust present.

20. An apparatus for determining the proportion of particles of differing particle types in a mixture comprising:

(i) a particle feeder having an exit end;

(ii) a smooth, planar, stationary surface inclined sufficiently to enable descent of non-cohesive particles down the surface through the force of gravity, said inclined surface having an upper inlet end located adjacent to and below the

exit end of the feeder and capable of being positioned at a distance no greater than the smallest dimension of the particles to be measured;

(iii) a source of illumination oriented with respect to the inclined surface so as to enable top-illumination of the particles as they descend down the inclined surface;

(iv) an image receiver oriented with respect to the inclined surface so as to enable collection of reflective-light images of the particles as they descend down the inclined surface; and

(v) a composition calculator which converts reflective-light image signals received from the image receiver into data indicative of at least one proportion of particle types in the mixture based on at least one optical property and/or shape of the particles.

21. The apparatus of claim 20 wherein the image receiver comprises a color camera.

22. The apparatus of claim 20 further comprising a feed controller having a mode for receiving feedback from the composition calculator for controlling the feed rate of the particles.

23. The apparatus of Claim 20 further comprising a gas nozzle for blowing a gas stream nearly parallel but slightly downward towards the inclined surface.